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Please contact the appropriate permitting authority (either a State or EPA Regional office) prior to acting on this information to ensure you have the most up-to-date permit and/or fact sheet. EPA recognizes the official version of a permit or fact sheet to be the version designated as such and appropriately stored by the respective permitting authority.

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National Pollutant Discharge Elimination System (NPDES) Permit Program

FACT SHEET

Regarding an NPDES Permit To Discharge to Waters of the State of Ohio
for U.S. Department of Energy, Fernald Environmental Management Project

Public Notice No.: 99-11-029
Public Notice Date: November 12, 1999
Comment Period Ends: December 13, 1999

OEPA Permit No.: 1IO00004*FD
Application No.: OH0009580

Name and Address of Applicant:
U.S.D.O.E. - Fernald E.M.P.
P.O. Box 398705
Cincinnati, Ohio 45239

Name and Address of Facility Where Discharge Occurs:
U.S.D.O.E. - Fernald E.M.P.
7400 Willey Road
Fernald, Ohio 45030

Receiving Water: Paddy's Run and
Great Miami River

Subsequent
Stream Network: Ohio River

Introduction

Development of a Fact Sheet for NPDES permits is mandated by Title 40 of the Code of Federal Regulations, Section 124.8 and 124.56. This document fulfills the requirements established in those regulations by providing the information necessary to inform the public of actions proposed by the Ohio Environmental Protection Agency, as well as the methods by which the public can participate in the process of finalizing those actions.

This Fact Sheet is prepared in order to document the technical basis and risk management decisions that are considered in the determination of water quality based NPDES Permit effluent limitations. The technical basis for the Fact Sheet may consist of evaluations of promulgated effluent guidelines, existing effluent quality, instream biological, chemical and physical conditions, and the relative risk of alternative effluent limitations. This Fact Sheet details the discretionary decision-making process empowered to the Director by the Clean Water Act and Ohio Water Pollution Control Law (ORC 6111). Decisions to award variances to Water Quality Standards or promulgated effluent guidelines for economic or technological reasons will also be justified in the Fact Sheet where necessary.

Procedures for Participation in the Formulation of Final Determinations

The draft action shall be issued as a final action unless the Director revises the draft after consideration of the record of a public meeting or written comments, or upon disapproval by the Administrator of the U.S. Environmental Protection Agency.

Within thirty days of the date of the Public Notice, any person may request or petition for a public meeting for presentation of evidence, statements or opinions. The purpose of the public meeting is to obtain additional evidence. Statements concerning the issues raised by the party requesting the meeting are invited. Evidence may be presented by the applicant, the state, and other parties, and following presentation of such evidence other interested persons may present testimony of facts or statements of opinion.

Requests for public meetings shall be in writing and shall state the action of the Director objected to, the questions to be considered, and the reasons the action is contested. Such requests should be addressed to:

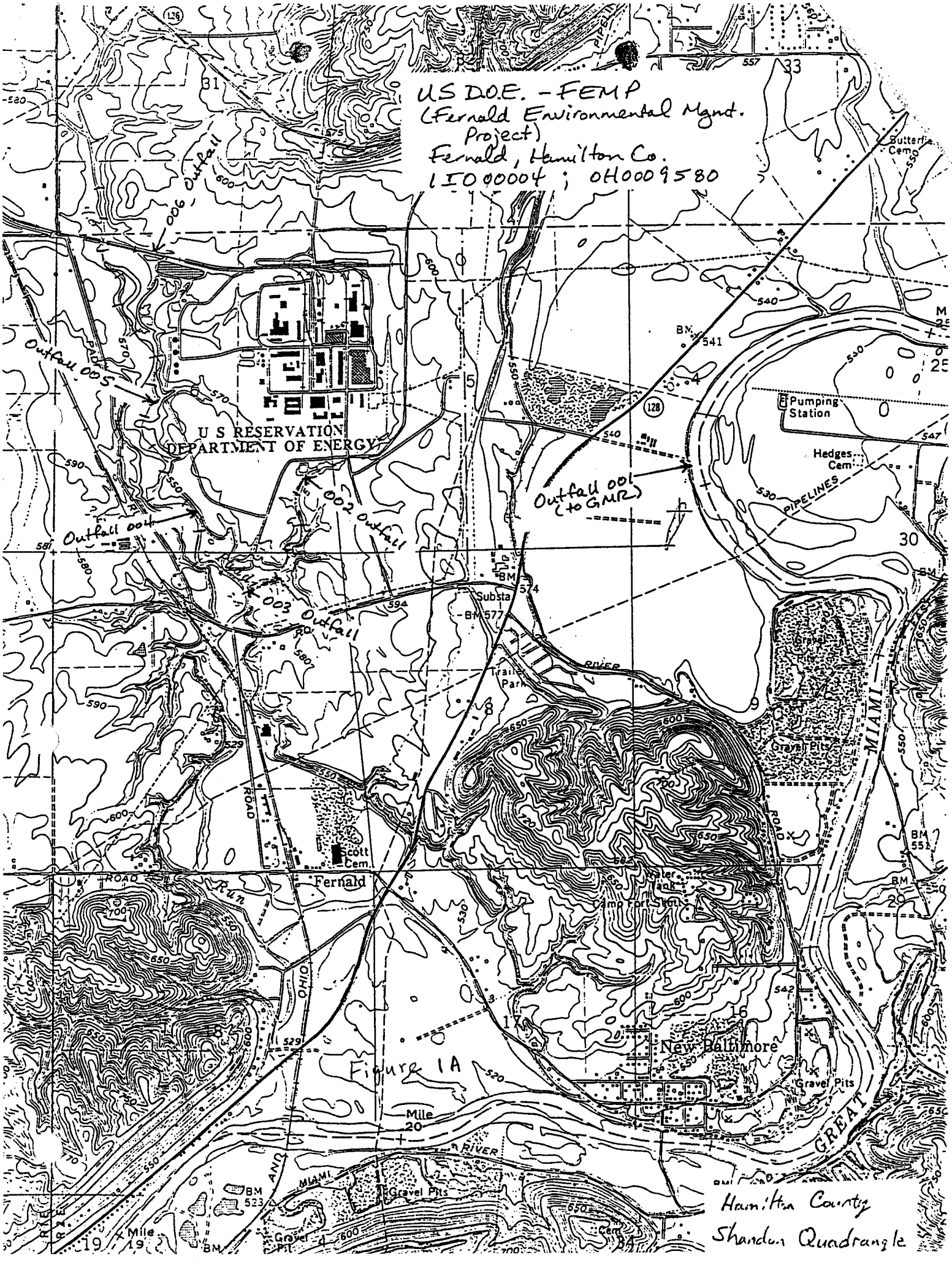
Legal Records Section
Ohio Environmental Protection Agency
P.O. Box 1049
1800 WaterMark Drive
Columbus, Ohio 43216-1049

Interested persons are invited to submit written comments upon the discharge permit. Comments should be submitted in person or by mail no later than 30 days after the date of this Public Notice. Deliver or mail all comments to:

Ohio Environmental Protection Agency
Attention: Division of Surface Water
Permits Section
P.O. Box 1049
1800 WaterMark Drive
Columbus, Ohio 43216-1049

The OEPA permit number and Public Notice numbers should appear on each page of any submitted comments. All comments received no later than 30 days after the date of the Public Notice will be considered.

The application, fact sheet, public notice, permit including effluent limitations, special conditions, comments received and other documents are available for inspection and may be copied at a cost of 25 cents per page at the Ohio Environmental Protection Agency at the address shown above any time between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday. Copies of the Public Notice are available at no charge at the same address.


U.S D.O.E. - FEMP
(Fernald Environmental Mgmt. Project)
Fernald, Hamilton Co.
1I0000004 ; OH0009580
U S RESERVATION
DEPARTMENT OF ENERGY
Outfall 006
Outfall 005
Outfall 004
002 Outfall
003 Outfall
Outfall 001 (to GMR)
PIPELINES
Pumping Station
Hedges Cem.
Butterfield Cem.
Substa
Trailer Park
Gravel Pits
RIVER
MIAMI
GREAT
ROAD
Scott Cem.
Fernald
Run
OHIO
AND
Water tank
Camp Fort Stan
New Baltimore
Mile 20
Mile 19
BM 523
Cem
Figure 1A
Hamilton County
Shandon Quadrangle

Location of Discharge

The United States Department of Energy Fernald Environmental Management Project (Fernald) is located in Fernald, Ohio, in Hamilton County. The facility discharges to Paddy's Run at River Mile (RM) 2.50 (outfall 002) and to the Great Miami River at RM 24.73 (outfall 001). The remaining outfalls (outfalls 003, 004, 005, and 006) discharge to Paddy's Run, which flows into the Great Miami River.

Figure 1A shows the approximate location of the facility.

Facility Description (as of August 1995)

Fernald is owned and operated by the United States Department of Energy. Fernald was formerly the Feed Materials Production Center and produced uranium metal. The uranium metal was made into fuel cores and target elements for use in nuclear reactors or into other forms used by the Department of Defense. Manufacturing operations were ceased in July of 1989; environmental clean-up began in August 1991. Remediation activities include remedial investigation, waste management and removal, nuclear materials handling, and ground water and wastewater treatment. All remediation activities are being conducted under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

In order to remove uranium and radionuclides as well as heavy metals and organic compounds from the ground water and process wastewater, Fernald installed an Advanced Wastewater Treatment system (AWWT). The AWWT consists of precipitation/clarification, activated carbon adsorption, and ion exchange. Removal of uranium, radionuclides, and heavy metals will occur in the precipitation/clarification stage. Additional uranium removal will occur in the ion exchange system. Any volatile organic chemicals will be removed in the carbon adsorption stage. Process waste slurries generated at the AWWT will be dewatered via vacuum filters. The solids will be drummed.

Sanitary wastewaters are treated at the on-site sewage treatment plant, which consists of the following processes: comminution, bar screening, grit removal, primary clarification, trickling filtration, secondary clarification, and ultraviolet disinfection. The sludge is digested in an anaerobic digester, dewatered by vacuum filters, and drummed. The drums are stored on controlled storage pads.

Facility Description update (as of 1998)

Type of waste and treatment

Outfall 001:

a. Advanced Wastewater Treatment Phase I (AWWT PI), treats flows from the stormwater retention basin (SWRB), southfield extraction wells (SEW) and the south plume recovery and optimization wells (SPROW). AWWT PI provides the following treatment: flow equalization, pH

adjustment, coagulation/floculation, clarification, filtration, ion exchange resin vessels, final pH adjustment, filtration, then discharge to outfall 001. In the event of a storm exceeding the designed basin capacity, the overflow may reach Paddy's Run via outfall 002, or the overflow may be discharged directly to the Great Miami River via outfall 001.

b. Advanced Wastewater Treatment Phase II (AWWT PII) treats flows from the surge lagoon, which receives flows from the general sump, Waste Pit Remedial Action Project (WPRAP) stormwater management pond, Waste Pit Perimeter Area Storm water Run off, stormwater runoff of the waste pit, Pit 6 stormwater runoff and the new Online Disposal Facility (OSDF). All cells of the OSDF will not be filled for many years. In addition, the AWWT PII receives flow from the Vitrification Pilot Plant, the Boiler Sump, former production area excavation and dewatering activities, and the AWWT dewatering facility. AWWT PII treatment includes precipitation/clarification, multimedia filtration, activated carbon absorption, and ion exchange.

c. Sewage Treatment Plant receives flow from the personal showers, laundry and sanitary facilities. The sanitary treatment plant provides the following treatment: comminution, activated sludge, clarification, ultraviolet disinfection. Sludge is anaerobically digested, then hauled to the AWWT slurry dewatering facility for dewatering. Sludge is then packaged and managed as low-level radioactive waste.

d. South Plume Interim Treatment facility (SPIT) treats flow from the South Plume and consists of granular multimedia filters, bag filtration and ion-exchange.

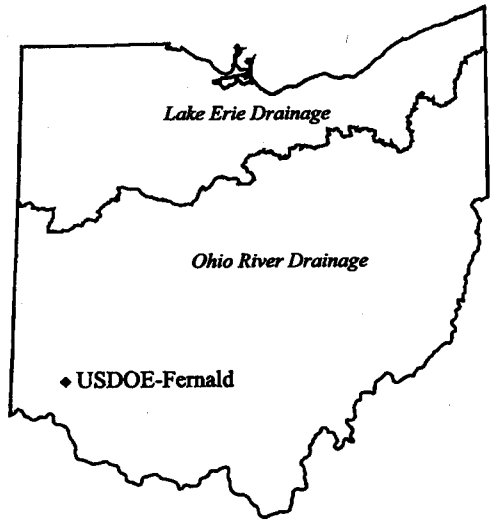
e. Advanced Wastewater Treatment Expansion will treat wastewater pumped from the Southfield Extraction Wells (SEW), and the South Plume Recovery and Optimization Wells (SPROW). The AWWT expansion was to be completed by mid 1998, with treatment of the ground water to commence from the third quarter of 1998. The AWWT expansion consists of aeration, grannular multimedia filtration and ion exchange.

f. Interim Advanced Wastewater Treatment (IAWWT) facility may treat flows from the SPROW and SEW, as well as the SWRB. The IAWWT consists of grannular multimedia filters, bag filters, cartridge filters and ion exchange.

g. The wastewater from the South Plume, South plume Optimization, and /or South Field Extraction system will be discharged via outfall 001 to the Great Miami river.

Outfall 002 receives overflows from the stormwater retention basin. Outfalls 003, 004, 005 and 006 receive stormwater runoff. Outfall 601 receives sanitary wastewater treatment plant effluent.

Stream Location:
Great Miami River, RM 24.73
Stream Network:
Great Miami River
Major Basin:
Great Miami River (Ohio River Basin)
Ohio EPA River Code:
14-001
USEPA River Reach number:
05080002-004
Designated Stream Uses:
Warmwater Habitat
Agricultural Water Supply
Human Health (non-drinking)
Industrial Water Supply



Assessment of Impact on Receiving Waters

An assessment of the impact of a permitted point source on the immediate receiving waters includes an evaluation of the available chemical/ physical (water column, effluents, sediment, flows), biological (fish and macroinvertebrate assemblages), and habitat data which have been collected by Ohio EPA pursuant to the Five-Year Basin Approach for Monitoring and NPDES Reissuance. Other data may be used provided it was collected in accordance with Ohio EPA methods and protocols as specified by the Ohio Water Quality Standards and Ohio EPA guidance documents. Other information which may be evaluated includes, but is not limited to, NPDES permittee self-monitoring data and effluent and mixing zone bioassays conducted by Ohio EPA, the permittee, or U.S. EPA.

Ohio EPA relies on a tiered approach in attempting to link administrative activity indicators (*i.e.*, permitting, grants, enforcement) with true environmental indicators (*i.e.*, stressor, exposure, and response indicators). Stressor indicators generally include activities which have the potential to degrade the aquatic environment such as pollutant discharges (permitted and unpermitted), land use effects, and habitat modifications. Exposure indicators include whole effluent toxicity tests, tissue residues, and biomarkers, each of which provides evidence of biological exposure to stressor or bioaccumulative agents. Response indicators include the more direct measures of community and population response and are represented here by the biological indices which comprise Ohio EPA's biological criteria. The key is in using the different types of indicators within the roles which are the most appropriate for each. Describing the causes and sources associated with observed impairments relies on an interpretation of multiple lines of evidence including the water chemistry data, sediment data, habitat data, effluent data, biomonitoring results, land use data, and biological response signatures within the biological data itself. Thus the assignment of principal causes and sources of impairment represents the association of impairments (defined by response indicators) with stressor and exposure indicators.

Use attainment is a term which describes the degree to which environmental indicators are either above or below criteria specified by the Ohio Water Quality Standards (WQS; Ohio Administrative Code 3745-1). Assessing use attainment status for aquatic life uses involves a primary reliance on the Ohio EPA biological criteria (OAC 3745-1-07; Table 7-14). These are confined to ambient assessments and apply to rivers and streams outside of mixing zones. Numerical biological criteria are based on multimetric biological indices which include the Index of Biotic Integrity (IBI) and modified Index of Well-Being (MIwb), which indicate the response of the fish community, and the Invertebrate Community Index (ICI), which indicates the response of the macroinvertebrate community. Numerical endpoints are stratified by ecoregion, use designation, and stream or river size. Three attainment status results are possible at each sampling location - full, partial, or non-attainment. Full attainment means that all of the applicable indices meet the biocriteria. Partial attainment means that one or more of the applicable indices fails to meet the biocriteria. Non-attainment means that none of the applicable indices meet the biocriteria or one of the organism groups reflects poor or very poor performance. An aquatic life use attainment table (see Table 1) is constructed based on the sampling results and is arranged from upstream to downstream and includes the sampling locations indicated by river mile, the applicable biological indices, the use attainment status (*i.e.*, full, partial, or non), the Qualitative Habitat Evaluation Index (QHEI), and comments and observations for each sampling location.

DOE Fernald (FEMP)

The Fernald Environmental Management Project (FEMP) is a 1050 acre government owned, contractor operated facility. The facility began operations in 1951 for the processing of feed materials to produce high purity uranium metal for use in the nation's weapons program. Production peaked in 1960 at approximately 12,000 metric tons of uranium and reached a low in 1975 of about 1230 metric tons. Production ceased in 1989 and the focus was shifted to environmental cleanup in 1991. The waste water treatment system discharges to the Great Miami River at River Mile (RM) 24.73 through outfall 001. Outfall 001 consists of treated wastewaters from the contaminated south plume, sanitary sewage, former production area stormwater, sludge pond decant, coal pile runoff, boiler blowdown, cooling water, biodenitrification effluent, investigation derived wastewater, perched groundwater, and sand filter backwash. The sanitary wastewater treatment plant (WWTP) was designed for an average flow of 0.35 MGD. The system currently processes an average of 0.16 MGD. The other flow components of outfall 001 (remediation wastewater, dewatering, groundwater treatment) combined with sanitary wastewater flow contributes an average of 2.775 MGD to the Great Miami River. FEMP has a proposal to increase the flow of outfall 001 to 6.173 MGD. Outfall 002 is a stormwater outfall to an unnamed tributary (at RM 0.50) which flows into Paddys Run at RM 1.90. Stormwater passing through this outfall has historically been a major contributor to the south plume of contaminated ground water. Two stormwater retention basins have been constructed to retain stormwater prior to treatment at the Advanced Wastewater Treatment Plant. In extremely wet weather the stormwater retention basins overflow some runoff without treatment to Paddys Run. Other permitted outfalls from the FEMP facility include stormwater runoff to Paddys Run from outfalls 003 (stormwater retention basin overflow tributary - RM 1.90), 004 (RM 2.25), 005 (Pilot Plant ditch - RM 2.84), and 006 (RM 3.40).

The following summary was compiled from information in the *Biological and Water Quality Study of the Middle and Lower Great Miami River and Selected Tributaries,* Ohio EPA Technical Report MAS/1996-12-8 (in progress) and Ohio EPA files. As part of the above referenced study, chemical and biological sampling was conducted at 70 sites in the Great Miami River mainstem from Dayton to the Ohio River and in Paddys Run during June-October 1995. Similar sampling for the Great Miami River was also conducted by the Ohio EPA during 1980 and 1989.

Annual average sanitary wastewater flow has fluctuated from lows of 0.107 MGD in 1985 and 1990 to a high of 0.231 MGD in 1988. Fluctuations in flow from the sanitary wastewater treatment plant (601) are primarily dependent upon the size of the workforce. Total flow through outfall 001 fluctuates with remedial activities and stormwater events which are routed through 001. Total discharge through the new 24 inch 001 outfall line to the Great Miami River increased with the initiation of groundwater pumping in August, 1993. The storm water retention basin which discharges overflow to outfall 002 was placed into operation in 1986, with an expansion completed in 1988. Elevated median levels of flow at 002 in 1995 are attributable to the small data set for that year. Three overflows occurred: May 18, 1995 at 1.675 million gallons, May 19, 1995 at 0.428 million gallons, and August 6, 1995 at 1.600 million gallons.

The 95th percentile ammonia and nitrate levels peaked in 1983-84 at outfall 001. The daily NPDES maximum limit of 43 kg/day ammonia was not exceeded (the daily maximum limit prior to October 31, 1980 was 374 kg/day). The daily NPDES maximum limit for nitrate of 3,180 kg/day also was not

exceeded. Although plans for construction of an air stripper to remove ammonia were not completed, nitrate reductions between 1984 and 1989 are a result of the biodenitrification towers.

After 1989, the shift from production to remediation contributed to the lowered discharges of ammonia and nitrate. After 1995, nitrate loadings decreased because all remaining high nitrate process waters, including the uranyl nitrate hexahydrate (UNH) waters, had been treated and discharged. Fluoride bearing wastewaters are byproducts of uranium manufacturing. As the existing inventory of stored wastewaters and manufacturing material on the site have been removed, the levels of fluoride in the 001 effluent have declined.

Four acute bioassay tests were conducted using effluent from the FEMP 001 outfall between January and July, 1996. All four tests were conducted using fathead minnows and *Ceriodaphnia dubia* as test organisms. Fathead minnow acute toxicity tests showed 3 of 4 tests with 0% toxicity; one test showed 5% mortality. *C. dubia* acute toxicity tests showed similar results, with only one test showing toxicity (10%). Results indicated no significant acute toxicity associated with the 001 outfall.

The 1995 ambient chemical/physical monitoring results downstream from the FEMP 001 outfall were indicative of good water quality with no associated chemical criteria exceedences recorded by a Datasonde continuous monitor. Several grab water samples taken from the Great Miami River at RM 24.55 detected mercury-T which exceeded the human health 30-day average numerical criteria. Paddys Run water samples were collected at three sites during 1995 (RMs 4.73, 3.27, and 0.25) and were analyzed by a contract laboratory.

Mean D.O. concentrations (daytime grab samples) measured in Paddys Run ranged from 4.45 mg/l at RM 0.25 to 9.6 mg/l at RM 3.27. Mean values recorded at RM 0.25 were the lowest of the 1995 survey with four of six measurements below WWH water quality criteria. This site also experienced significantly lower temperatures (13°C to 18°C) and pH values (6.77 SU to 7.47 SU) compared to upstream sites, reflecting the influence of groundwater and the interstitial nature of Paddys Run. While most of the BOD_5 concentrations recorded in Paddys Run were less than the laboratory detection limit of 6 mg/l, significantly elevated values ranging between 12 and 40 mg/l occurred at all sites on July 11 and September 6, both periods of lower flow. Concentrations of nitrate-N were relatively low with mean values ranging from 0.53 mg/l at RM 0.25 to 1.34 mg/l at RM 4.73. While no elevated phosphorus concentrations were observed at upstream sites (RMs 4.73 and 3.27), elevated values were observed at RM 0.25, ranging from 0.37 mg/l to 0.51 mg/l. Concentrations of mercury exceeded water quality criteria at all three sites on various occasions. Organic compounds were measured in the surface water only at RM 0.25. Chloroethane, alpha-hexachlorocyclohexane, and delta-hexachlorocyclohexane were detected in the water column on September 20. Dieldrin was also detected on September 20 at a concentration above water quality criteria. Additionally, low levels of hexachlorobenzene were detected on June 27.

Radiological parameters in surface water were compared with the final remediation levels (FRL) taken from *Operable Unit 5 Record of Decision* (DOE Fernald, December 1995), and background values found in the *Site Environmental Report* (DOE Fernald, June 1996), *Characterization of Background Water Quality for Streams and Groundwater* (DOE Fernald, 1994), and *Remedial Investigation Report for Operable Unit 5* (DOE Fernald, March 1995). No radiological parameters exceeded or approached the FRL. Levels of total uranium and radium 226 were slightly elevated above background

in Paddys Run on the FEMP site. A drainage ditch that enters Paddys Run on the site has been found to contain elevated levels of uranium and was remediated in 1996. Drainage from the production area will be captured in a sump and pumped to the stormwater retention basins for treatment in the Advanced Waste Water Treatment facility.

Sediment sampling downstream from the FEMP outfall 001 detected concentrations of benzo fluoranthene and elevated levels of cadmium. Sediment samples were collected from three sites (RMs 4.73, 3.27 and 2.82) in Paddys Run. Eighty-nine percent of sediment chemicals were ranked "non-elevated" by applicable classification systems. The concentration of cadmium at RM 3.27 (1.9 mg/kg) was ranked by Ohio EPA guidelines as "extremely elevated" while concentrations at both RMs 4.73 (1.7 mg/kg) and 2.82 (0.97 mg/kg) were considered "highly elevated".

Radiological parameters in sediment were compared with the final remediation levels (FRL) taken from *Operable Unit 5 Record of Decision* (USDOE Fernald 1995) and background values found in the *Site Environmental Report* (USDOE Fernald 1996), and *Remedial Investigation Report for Operable Unit 5* (USDOE Fernald 1995). Thorium levels were slightly elevated above background in the Great Miami River sediments. Radium 226 was approximately three times background in the Great Miami River sediments. Total Uranium was approximately three times background in Paddys Run below the Pilot Plant Drainage Ditch. No radiological parameters exceeded the FRL.

Largemouth bass, white bass (*Micropterus dolomieui* and *Morone chrysops*, respectively) and common carp (*Cyprinus carpio*) from the confluence of the Great Miami River and Paddys Run (RM 20) were analyzed for total uranium. The bass contained 0.001 micrograms per gram and the carp 0.002 micrograms per gram of total uranium. The Agency for Toxic Substances and Disease Registry lists the average background amount of uranium in food at 80 to 70,000 micrograms per gram. EPA states that long term exposure to 0.003 milligrams of uranium per kilogram of body weight per day in the food or drinking water is safe for humans.

The FEMP WWTP 001 outfall (RM 24.73) was not significantly impacting the macroinvertebrate community of the Great Miami River. Community performance was in the very good range (ICI=42) at the downstream station (RM 22.5). The macroinvertebrate community performance within the FEMP WWTP mixing zone (RM 24.7) was meeting WWH expectations with a narrative evaluation of good on 24 October, 1995. There was no discernible indication of effluent toxicity. Macroinvertebrate communities were sampled in Paddys Run at RMs 4.9 and 3.3 to evaluate the FEMP 006 stormwater outfall. Community performance at the upstream station was fair (ICI=28) due to lower than expected diversity and high percent predominance of non-Tanytarsini dipterans and non-insects. Qualitative sampling from the natural substrates noted a predominance of the caddisfly species *Helicopsche borealis* and genus *Chimarra*. However, densities were noted as low and the EPT diversity (6) was lower than expected. The artificial substrates ended up in less than optimal current speed (at 0.05 fps) due to low stream flow conditions, which may have contributed to the low ICI score. However, in small reference streams similar to Paddys Run, ICI scores typically equal or exceed the WWH criterion expectations even under slow current conditions. This upstream station may be mildly impacted by nonpoint sources in addition to low flow conditions. Downstream from the FEMP 006 stormwater outfall, the macroinvertebrate community improved into the very good range (ICI=42). There was no discernible impact from the FEMP 006 stormwater outfall. Paddys Run was not sampled farther downstream due to a lack of water in the stream channel.

The 1995 biological sampling in the Great Miami River upstream and downstream from the FEMP 001 outfall indicated partial attainment of the WWH use designation due to fish community impairment. This is an improvement from 1980 when this segment was in non-attainment of the WWH criteria. Fish sampling in the Great Miami River downstream from the FEMP 001 outfall yielded a total of 436 fish (436/km) comprised of 35 species. The fish community was indicative of fair to exceptional quality (IBI=33, MIwb=10.2). Fish communities in Paddys Run were sampled at four locations.

The fish communities in the two most upstream Paddys Run locations (RMs 4.7 and 3.3) were in the good to very good range, with IBI scores (44 and 49) achieving the WWH ecoregional biocriterion. No apparent negative influences were noted in the fish community at RM 3.3, an area immediately downstream from the FEMP 006 stormwater outfall. The two downstream sites in Paddys Run (RMs 2.8 and 0.2) are located in an area which loses stream flow to the underlying Great Miami Aquifer. This loss of flow is due to Paddys Runs highly permeable channel bottom which has eroded into the Great Miami Aquifer. The high permeability results in the lower three miles of Paddys Run going intermittent or completely dry during summer low flow periods. During 1995, Paddys Run at RM 2.8 had minimum flow during August, went completely dry in September and was flowing again in October. The isolated pool observed at RM 0.2 in Paddys Run during the August sampling event was nearly gone during the October sampling visit; however, this site remained wet due to ground water influences.

An attempt was made to sample fish communities in Paddys Run at two locations (RM 2.8 and 0.2) in the Great Miami Aquifer area, with RM 2.8 influenced by the FEMP pilot plant drainage ditch (outfall 005) and RM 0.2 influenced by the storm sewer outfall ditch (outfalls 002 and 003). Sampling was conducted at RM 0.2 only once during 1995, and was restricted to a 70 meter pool due to intermittent flow. The IBI at RM 0.2 was 26, indicative of poor conditions. Fish sampling results from RM 2.8 revealed a community reflective of marginally good conditions during the August sampling event. The IBI scored a 38, within the non-significant departure range of the WWH biocriterion. Sampling in October yielded no fish. Between the August and October sampling, Paddys Run in the vicinity of RM 2.8 went completely dry, causing a severe impact on the fish populations. Based on the 1995 fish community study of Paddys Run, impacts to biological condition attributable to the FEMP site were not evident. Stream desiccation was the overriding influence on fish community degradation.

Table 1. Aquatic life use attainment status for Paddys Run during 1995, and for the lower Great Miami River mainstem based on sampling conducted during June-October 1995, 1989, and 1980 (mixing zone sampling locations are italicized).

RIVER MILE Fish/Invert.	IBI	Mod. Iwb	ICI[a]	QHEI[b]	Use Attainment Status[c]	Comments
Great Miami River (1995)						
	Eastern Corn Belt Plains - WWH Use Designation (Existing)					
25.8[B]/27.1	31*	9.2	46	58.5	PART.	SR 126, SR 27
	Interior Plateau - WWH Use Designation (Existing)					
24.7[B]/24.7	*32*	*8.7*	*G*	*78.0*	*NA*	*Fernald mixing zone*
23.4[B]/22.5	33*	10.2	42	84.0	PART.	Adj. East River Road
21.1[B]/ --	30*	9.6	--	75.5	[PART.]	ust. Paddys Run
20.0[B]/ --	30*	8.9	--	54.0	[PART.]	dst. Paddys Run, gravel quarry
16.9[B]/17.9	30*	9.2	42	74.0	PART.	Adj. East Miami River Road
14.8[B]/14.8	35[ns]	10.0	42	80.0	FULL	dst. Taylor Creek, I-275
11.6[B]/9.5	33*	9.9	44	78.2	PART.	ust. Chevron Chemical
8.4[B]/8.4	36[ns]	10.2	38	79.5	FULL	dst. SR 50
5.6[B]/5.7	31*	9.3	42	78.5	PART.	Lost Br., dst. Whitewater R.
3.9[B]/ --	30*	8.1*	--	46.5	[FULL]	Shawnee boat ramp, Ohio R. Infl.
1.8[B]/ --	36[ns]	8.0*	--	57.5	[FULL]	ust. Mouth, Ohio River infl.
Paddys Run (1995)						
	*Interior Plateau - **WWH Use Designation (Existing)***					
4.7H/4.9	44	NA	28[ns]	71.5	FULL	ust. FEMP 006 outfall
3.3H/3.3	49	NA	42	71.5	FULL	dst. FEMP 006 outfall
2.8H/ --	38[ns]/12*[d]	NA	--	60.5	[FULL/NON]	dst. Pilot Plant drain. ditch
0.2H/--	26*/ --	NA	--	67.5	[NON]	ust. mouth
Great Miami River (1989)						
	Eastern Corn Belt Plains - WWH Use Designation (Existing)					
23.4[B]/22.5	25*	7.9*	50	75	PART.	Adj. East River Road
	Interior Plateau - WWH Use Designation (Existing)					
21.2[B]/--	25*	7.9*	--	--	[NON]	ust. Paddys Run
20.1[B]/--	33*	7.8*	--	51	[NON]	dst. Paddys Run
15.6[B]/--	27*	8.6	--	74	[PART.]	ust. Miamitown Rd.
14.8[B]/14.9	25*	8.1[ns]	52	75	PART.	dst. Taylor Creek, I-275
11.6[B]/9.5	25*	8.1[ns]	48	60	PART.	ust. Chevron Chemical
8.2[B]/8.3	33*	8.8	42	77	PART.	dst. Chevron Chemical

Table 1 Continued.

RIVER MILE Fish/Invert.	IBI	Modified Iwb	ICI[a]	QHEI[b]	Use Attainment Status[c]	Comments
Great Miami River (1989)						
		Interior Plateau - WWH Use Designation (Existing)				
6.3[B]/5.8	29*	7.8*	50	--	PART.	dst. Whitewater River
0.9[B]/--	34*	7.8*	--	--	[NON]	Ust. Ohio River, Impounded
Great Miami River (1980)						
		Eastern Corn Belt Plains - WWH Use Designation (Existing)				
26.1[B]/--	25*	7.4*	--	--	[NON]	dst. S.R. 126
		Interior Plateau - WWH Use Designation (WWH Existing)				
23.6[B]/--	17*	6.6*	--	--	[NON]	dst. National Lead
18.2[B]/--	25*	7.7*	--	--	[NON]	dst. Welch Sand & Gravel
17.1[B]/--	28*	7.5*	--	--	[NON]	dst. Welch Sand & Gravel
13.1[B]/15.1	30*	6.8*	48	--	PART.	dst. I-74
11.6[B]/9.5	21*	7.4*	42	--	NON	ust. Gulf Oil
7.4[B]/--	26*	7.0*	--	--	[NON]	dst. Gulf Oil
4.6[B]/--	25*	5.9*	--	--	[NON]	dst. Lost Bridge
0.9[B]/--	27*	6.6*	--	--	[NON]	ust. mouth

Ecoregional Biological Criteria: (From OAC 3745-1-07, Table 7-14)

E. Corn Belt Plains (ECBP)					*Interior Plateau (IP)*		
INDEX - Site Type	WWH	EWH	MWH[e]	LRW[f]	WWH	EWH	MWH[e]
IBI - Headwaters	40	50	24/30	18	40	50	24
IBI - Wading	40	50	24/30	18	40	50	24
IBI - Boat	42	48	24/NA	16	38	48	24
Mod. Iwb - Wading	8.3	9.4	6.2/NA	4.5	8.1	9.4	6.2
Mod. Iwb - Boat	8.5	9.6	5.8/6.6	5.0	8.7	9.6	5.8
ICI	36	46	22/NA	14	30	46	22

* Significant departure from applicable biocriterion (>4 IBI or ICI units, >0.5 MIwb units); poor and very poor results are underlined.

ns Nonsignificant departure from biological criterion (≤4 IBI, ≤4 ICI, ≤0.5 Miwb units).

a Narrative evaluation used in lieu of ICI (E=Exceptional; VG= Very Good; G=Good; MG=Marginally good; F=Fair; P=Poor; VP=Very Poor).

b Qualitative Habitat Evaluation Index (QHEI) values based on Rankin (1989).

c Attainment status based on one organism group is parenthetically expressed.

d IBI score in Paddys Run during normal flows / and intermediate to dry conditions

e MWH (Modified Warmwater Habitat) for channelized habitats/impounded habitats.

f Interim Criteria for Limited Resource Water.

B Fish sampled using the Boat Method.

H Headwater site (drainage area < 20 square miles) fish sampling was conducted using a wadeable method.

Development of Water-Quality-Based Effluent Limts

Determining appropriate effluent concentrations is a multiple-step process in which parameters are identified as likely to be discharged by a facility, evaluated with respect to Ohio water quality criteria, and examined to determine the likelihood that the existing effluent could violate the calculated limits.

The assimilative capacity was divided among facilities receiving allocation in order to account for possible interactivity of the discharges. The study area is depicted in Figure 1.

Antigradation and Expansion

USDOE-Fernald is proposing to expand from 2.775 MGD to 6.173 MGD. Under the antidegradation rule, USDOE-Fernald can receive an increase in their permitted load of up tp 10 % of the wasteload allocation. A complete antidegradation review would not be required if the increase in the permitted load is less than 10 % of the allocation and the resultant limit is still less than 80 % of the allocation. A larger increase may be allowed, but a complete antidegradation review would be required.

Parameter Selection

Effluent data for USDOE-Fernald was used to determine what parameters should undergo wasteload allocation. The sources of effluent data are as follows:

Self-monitoring data (LEAPS)	January 1992 through September 1997
Self-monitoring data (new source evaluation)	1988 through 1993

The effluent data were checked for outliers and no extremes were found. The average and maximum projected effluent quality (PEQ) values are presented in Table 2. For a summary of the screening results, refer to the parameter groupings at the end of this section.

Wasteload Allocation

For those parameters that require a wasteload allocation (WLA), the results are based on the uses assigned to the receiving waterbody in OAC 3745-1. The applicable waterbody uses for this facility's discharge and the associated stream design flows are as follows:

Aquatic life (WWH)		
Toxics (metals, organics, etc.)	Average	Annual 7Q10
	Maximum	Annual 1Q10
Ammonia-N	Average	Summer/winter 30Q10
Agricultural Water Supply		Harmonic mean flow
Human Health (nondrinking)		Harmonic mean flow

Allocations can not exceed the Inside Mixing Zone Maximum. The data used in the WLA are listed in Tables 3 and 4. The wasteload allocation results to maintain all applicable criteria are presented in Table 5. The CONSWLA program was used to model conservative parameters requiring allocation.

Reasonable Potential

The preliminary effluent limits are the lowest average WLA (average PEL) and the maximum WLA (maximum PEL). To determine the reasonable potential of the discharger to exceed the WLA for each parameter, the facility's effluent quality is compared to the preliminary effluent limits. The average PEQ value (Table 2) is compared to the average PEL, and the maximum PEQ value is compared to the maximum PEL. Based on the calculated percentage of the respective average and maximum comparisons, the parameters are assigned to "groups", as listed in Table 6 (outfall 001) and 7 (outfall 002).

Whole Effluent Toxicity

The allowable effluent toxicity (AET) is a factor considered in evaluating whole effluent toxicity. The AET calculations are similar to those for aquatic life criteria (using the chronic toxicity unit (TU_c) and 7Q10 for average and the acute toxicity unit (TU_a) and 1Q10 for maximum). For USDOE-Fernald, the AET values are 1.0 TU_a and 62.95 TU_c.

Figure 1. Great Miami River Study Area

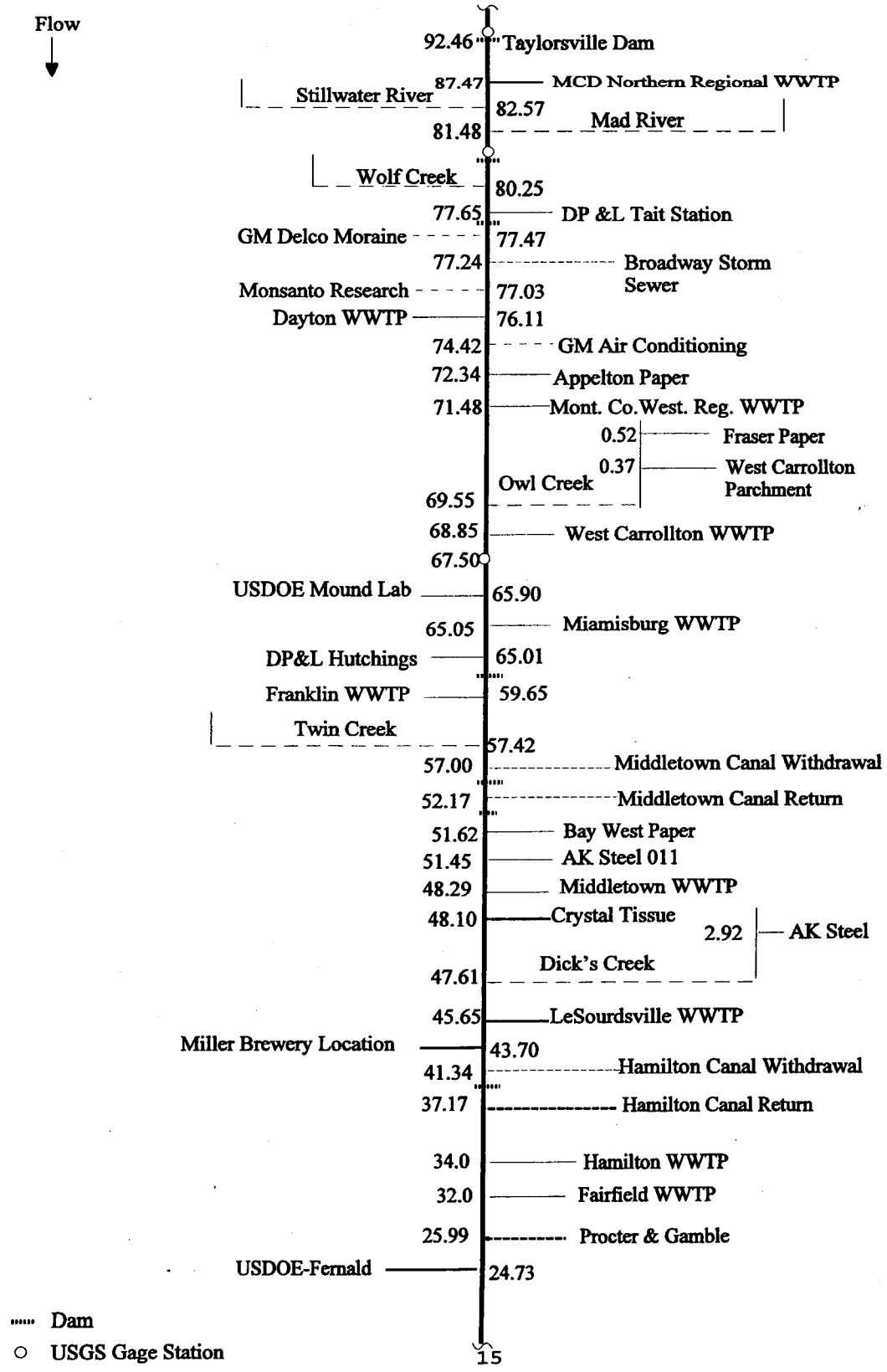


Table 2. Effluent Data for USDOE-Fernald

Parameter	Units	# of Samples	# > MDL	Average PEQ	Maximum PEQ
Self-Monitoring (LEAPS) Data					
Outfall 001					
Ammonia-N summer	mg/l	95	38	0.76	0.96
winter	mg/l	67	54	6.4	7.94
Chromium, hexavalent	ug/l	271	3	8.1	11.1
Chromium, total	ug/l	184	13	4.7	7.2
Copper	ug/l	276	27	11	16
Cyanide, total	mg/l	67	0	--	--
Fluoride	mg/l	273	273	1.48	2.13
Lead	ug/l	65	22	5.4	8.3
Nickel	ug/l	184	10	13	18
Nitrate	mg/l	182	182	12.9	19.2
NO_2 & NO_3	mg/l	91	91	12	18.5
Silver	ug/l	67	0	--	--
Outfall 002					
Ammonia-N summer	mg/l	2	0	--	--
Chlorine, total residual	mg/l	2	1	0.0277	0.038
Chromium, hexavalent	ug/l	5	0	--	--
Chromium, total	ug/l	7	1	10.2	14
Copper	ug/l	7	3	26.3	36
Fluoride	mg/l	7	7	0.76	1.04
Nickel	ug/l	7	0	--	--
NO3-N	mg/l	2	2	3.9	5.3
NO2-N & NO3-N	mg/l	4	4	2.7	3.6
Phosphorus	mg/l	4	3	0.36	0.49
Silver	ug/l	7	0	--	--
Self-Monitoring (New Source Evaluation) Data					
South Plume plus South Field Extraction System					
Aluminum	ug/l	91	41	3357	4600
Arsenic	ug/l	95	27	23	31
Barium	ug/l	91	89	93	128
Bis(2-ethylhexyl) phthalate	ug/l	41	8	8.8	12.1
Butyl benzyl phthalate	ug/l	41	8	8.8	12.1
Chromium, total	ug/l	92	17	28	39
Cobalt	ug/l	90	6	13	18
Copper	ug/l	92	18	20	27
Di-n-butyl phthalate	ug/l	41	8	15	21

Fluoride	mg/l	325	305	1.2	1.6
Iron	mg/l	92	64	9.9	13.6

(Table 2 continued)

Parameter	Units	# of Samples	# > MDL	Average PEQ	Maximum PEQ
Lead	ug/l	93	29	29	40
Magnesium	mg/l	92	92	53.7	73.5
Manganese	ug/l	92	80	880	1200
Molybdenum	ug/l	31	2	17.5	24
Nickel	ug/l	92	9	32	44
Nitrate-N	mg/l	216	184	11.5	15.8
Phenol	ug/l	311	72	22	31
Phosphorus	mg/l	314	217	2.3	3.13
Selenium	ug/l	93	20	6.6	9
Sulfate	mg/l	325	319	192	263
1,1,1-Trichloroethane	ug/l	99	9	6.6	9
Trichloroethene	ug/l	99	4	6.6	9
Zinc	ug/l	90	31	64	88
OSDF Leachate					
Aluminum	ug/l	206	173	127	174
Antimony	ug/l	199	31	148	203
Arsenic	ug/l	203	111	206	282
Barium	ug/l	194	192	2201	3015
Beryllium	ug/l	190	38	18	25
Bis(2-ethylhexyl) phthalate	ug/l	162	14	13	18
Boron	ug/l	4	3	1177	1612
Cadmium	ug/l	207	50	22	31
Chromium, total	ug/l	202	118	539	783
Cobalt	ug/l	202	82	110	151
Copper	ug/l	194	112	258	353
Cyanide	mg/l	248	24	0.052	0.071
1,1-Dichloroethane	ug/l	319	77	112	153
1,1-Dichloroethene	ug/l	302	41	177	243
Fluoride	mg/l	374	370	4.7	6.5
Iron	mg/l	208	181	339	464
Lead	ug/l	198	118	93	127
Magnesium	mg/l	213	212	450	616
Manganese	ug/l	206	202	15965	21870
Mercury	ug/l	201	15	0.53	0.72
Molybdenum	ug/l	107	28	190	260
Nickel	ug/l	204	111	352	482
Nitrate-N	mg/l	531	326	551	755
Phenol	ug/l	353	8	158	216
Phosphorus	mg/l	312	281	8	11
Selenium	ug/l	186	21	13	18
Silver	ug/l	201	48	83	114
Sulfate	mg/l	373	363	775	1062

Tetrachloroethene	ug/l	321	40	204	279
Trichloroethene	ug/l	318	47	3942	5400
Zinc	ug/l	198	134	645	883

Table 3. Water Quality Criteria in the Study Area

		Outside Mixing Zone Criteria				Inside
		Average			Maximum	Mixing
Parameter	Units	Human Health	Agri-culture	Aquatic Life	Aquatic Life	Zone Maximum
Ammonia summer (RM 87.5-64.5)	mg/l	-	-	0.4	-	-
Ammonia summer (RM 64.4-60.5)	mg/l	-	-	0.3	-	-
Ammonia summer (RM 60.4 on)	mg/l	-	-	0.3	-	-
Ammonia winter	mg/l	-	-	1.9	-	-
Acetone	ug/l	-	-	78000.	550000.	1100000
Antimony	ug/l	4300.	-	190.	650.	1300.
Arsenic	ug/l	-	100.	150.	340.	680.
Benzyl butyl phthalate	ug/l	-	-	49.	230.	460.
Beryllium [C]	ug/l	280.	100.	170.	3700.	7500.
beta-BHC [C]	ug/l	0.55	-	-	-	-
Bis(2-ethylhexyl) phthalate [C]	ug/l	59.	-	8.4	1100.	2200.
Bromoform [A,C]	ug/l	-	-	1000.	1500.	2900.
Cadmium	ug/l	-	50.	6.4	18.	36.
Chlorine, total residual	ug/l	-	-	11.	19.	38.
Chloroform [A,C]	ug/l	-	-	79.	1800.	3600.
Chromium $^{+6}$, diss.	ug/l	-	-	11.	16.	31.
Chromium, total	ug/l	3433000	100.	230.	4900.	9800.
Cobalt	ug/l	-	-	2.9	66.	130.
Copper	ug/l	-	500.	27.	44.	89.
Cyanide, free	mg/l	-	-	0.012	0.046	0.092
1,1-Dichloroethene [C]	ug/l	32.	-	78.	1500.	3000.
Diethyl phthalate	ug/l	120000.	-	120.	2600.	5200.
Di-n-butylphthalate	ug/l	12000.	-	190.	350.	700.
Dimethylphthalate	ug/l	2900000	-	73.	1700.	3300.
Fluoride	mg/l	-	2	-	-	-
gamma-BHC [C]	ug/l	0.63	-	0.01	-	-

(Continued Table 3)

Parameter	Units	Outside Mixing Zone Criteria: Average: Human Health	Outside Mixing Zone Criteria: Average: Agri-culture	Outside Mixing Zone Criteria: Average: Aquatic Life	Outside Mixing Zone Criteria: Maximum Aquatic Life	Inside Mixing Zone Maximum
Halomethanes [A,C]	ug/l	4700.	-	-	-	-
Iron	mg/l	-	5.	1.	-	-
Lead	ug/l	-	100.	30.	580.	1200.
Manganese	ug/l	-	-	100.	980.	2000.
Mercury	ug/l	0.012	10.	0.91	1.7	3.4
Methylene chloride [A,C]	ug/l	-	-	430.	9700.	19000.
Molybdenum	ug/l	-	-	180.	21000.	41000.
Nickel	ug/l	4600.	200.	150.	1300.	2600.
NO2+NO3	mg/l	-	100	-	-	-
PAHs [B,C]	ug/l	0.31	-	-	-	-
PCBs [C]	ug/l	0.00079	-	0.001	-	-
Pentachlorophenol [D]	ug/l	-	-	24.	39.	79.
Phenol	ug/l	-	-	370.	5300.	11000.
Selenium	ug/l	-	50.	5.	-	-
Silver	ug/l	-	-	1.3	13.	26.
Tetrachloroethene [C]	ug/l	3500.	-	73.	540.	1100.
Thallium	ug/l	48.	-	16.	71.	140.
1,1,1-Trichloroethane	ug/l	1030000.	-	88.	2000.	3900.
Trichloroethene [C]	ug/l	807.	-	75.	1700.	3400.
2,4,6-Trichlorophenol [C]	ug/l	36.	-	2.5	16.	32.
Zinc	ug/l	-	25000.	340.	340.	680.

[A] The halomethane criteria apply to the sum of bromoform (tribromomethane), dichlorobromomethane, methyl bromide (bromomethane), methyl chloride (chloromethane), methylene chloride (dichloromethane), and chloroform (trichloromethane).

[B] The PAH criteria apply to the sum of anthracene, benzo(a)anthracene, benzo(k)fluoranthene, 3,4-benzofluoranthene (benzo(b)fluoranthene), benzo(g,h,i)perylene, benzo(a)pyrene, chrysene, dibenzo(a,h)anthracene, fluorene, indeno(1,2,3-c,d)pyrene, napthalene, phenanthrene, and pyrene.

[C] Carcinogen

[D] The pH of 8.5 was used for the WQS of Pentachlorophenol.

Table 4. Instream Conditions and Discharger Flow

Parameter	Units		Value (cfs)	Basis
Upstream flow at Taylorsville				
7Q10	cfs	summer	51.21	USGS gage #03263000, 1923-94 data
		winter	81.42	USGS gage #03263000, 1923-94 data
		annual	49.22	USGS gage #03263000, 1923-94 data
1Q10	cfs	annual	41.0	USGS gage #03263000, 1923-94 data
30Q10	cfs	summer	59.93	USGS gage #03263000, 1923-94 data
		winter	112.78	USGS gage #03263000, 1923-94 data
Harmonic Mean Flow	cfs		236.68	USGS gage #03263000, 1923-94 data
Stillwater River at mouth				
7Q10	cfs	summer	16.63	USGS gage #03266000, 1927-94 data
		winter	41.51	USGS gage #03266000, 1927-94 data
		annual	16.63	USGS gage #03266000, 1927-94 data
1Q10	cfs	annual	10.14	USGS gage #03266000, 1927-94 data
30Q10	cfs	summer	22.24	USGS gage #03266000, 1927-94 data
		winter	55.77	USGS gage #03266000, 1927-94 data
Harmonic Mean Flow	cfs		109.16	USGS gage #03266000, 1927-94 data
Mad River at mouth				
7Q10	cfs	summer	142.57	USGS gage #03270000, 1916-94 data
		winter	185.93	USGS gage #03270000, 1916-94 data
		annual	141.26	USGS gage #03270000, 1916-94 data
1Q10	cfs	annual	134.36	USGS gage #03270000, 1916-94 data
30Q10	cfs	summer	157.02	USGS gage #03270000, 1916-94 data
		winter	211.29	USGS gage #03270000, 1916-94 data
Harmonic Mean Flow	cfs		387.26	USGS gage #03270000, 1916-94 data
Wolf Creek at mouth				
7Q10	cfs	summer	1.61	USGS gage #03271000, 1941-95 data
		winter	3.15	USGS gage #03271000, 1941-95 data
		annual	1.58	USGS gage #03271000, 1941-95 data
1Q10	cfs	annual	1.33	USGS gage #03271000, 1941-95 data
30Q10	cfs	summer	2.34	USGS gage #03271000, 1941-95 data
		winter	5.96	USGS gage #03271000, 1941-95 data
Harmonic Mean Flow	cfs		11.87	USGS gage #03271000, 1941-95 data
Twin Creek at mouth				
7Q10	cfs	summer	5.31	USGS gage #03272000, 1914-94 data
		winter	15.48	USGS gage #03272000, 1914-94 data
		annual	5.28	USGS gage #03272000, 1914-94 data
1Q10	cfs	annual	4.36	USGS gage #03272000, 1914-94 data
30Q10	cfs	summer	7.11	USGS gage #03272000, 1914-94 data
		winter	23.70	USGS gage #03272000, 1914-94 data
Harmonic Mean Flow	cfs		39.97	USGS gage #03272000, 1914-94 data

(Continued Table 4)

Parameter	Units		Value (cfs)	Basis
Four Mile Creek at mouth				
7Q10	cfs	summer	5.26	USGS gage #03272800, 1960-72 data
		winter	8.91	USGS gage #03272800, 1960-72 data
		annual	5.26	USGS gage #03272800, 1960-72 data
1Q10	cfs	annual	4.47	USGS gage #03272800, 1960-72 data
30Q10	cfs	summer	6.05	USGS gage #03272800, 1960-72 data
		winter	10.49	USGS gage #03272800, 1960-72 data
Harmonic Mean Flow	cfs		30.81	USGS gage #03272800, 1960-72 data
Holes Creek at mouth				
7Q10	cfs	summer	1.11	USGS gage #03271300, 1959-72 data
		winter	2.98	USGS gage #03272000, 1914-94 data
		annual	0.48	USGS gage #03271300, 1959-72 data
1Q10	cfs	annual	0.09	USGS gage #03272000, 1914-94 data
30Q10	cfs	summer	1.28	USGS gage #03271300, 1959-72 data
		winter	3.81	USGS gage #03272000, 1914-94 data
Harmonic Mean Flow	cfs		3.84	USGS gage #03271300, 1959-72 data
Indian Creek at mouth				
7Q10	cfs	summer	0.1	USGS gage #03274200, 1961-69 data
		winter	0.27	USGS gage #03272000, 1914-94 data
		annual	0.1	USGS gage #03274200, 1961-69 data
1Q10	cfs	annual	0.09	USGS gage #03272000, 1914-94 data
30Q10	cfs	summer	0.2	USGS gage #03274200, 1961-69 data
		winter	0.6	USGS gage #03272000, 1914-94 data
Harmonic Mean Flow	cfs		0.09	USGS gage #03274200, 1961-69 data
Clear Creek at mouth				
7Q10	cfs	summer	0.3	USGS gage #03271700, 1959-62 data
		winter	0.8	USGS gage #03272000, 1914-94 data
		annual	0.2	USGS gage #03271700, 1959-62 data
1Q10	cfs	annual	0.17	USGS gage #03272000, 1914-94 data
30Q10	cfs	summer	0.4	USGS gage #03271700, 1959-62 data
		winter	1.2	USGS gage #03272000, 1914-94 data
Harmonic Mean Flow	cfs		1.2	USGS gage #03271700, 1959-62 data
Elk Creek at mouth				
7Q10	cfs	summer	0.3	USGS gage #03272200, 1960-67 data
		winter	0.8	USGS gage #03272000, 1914-94 data
		annual	0.3	USGS gage #03272200, 1960-67 data
1Q10	cfs	annual	0.26	USGS gage #03272000, 1914-94 data
30Q10	cfs	summer	0.4	USGS gage #03272200, 1960-67 data
		winter	1.2	USGS gage #03272000, 1914-94 data
Harmonic Mean Flow	cfs		1.2	USGS gage #03272200, 1960-67 data

(Continued Table 4)

Parameter	Units		Value	Basis
Bear Creek at mouth				
7Q10	cfs	summer	2.2	USGS gage #03272000, 1914-94 data
		winter	3.92	USGS gage #03272000, 1914-94 data
		annual	2.19	USGS gage #03272000, 1914-94 data
1Q10	cfs	annual	2.04	USGS gage #03272000, 1914-94 data
30Q10	cfs	summer	2.5	USGS gage #03272000, 1914-94 data
		winter	5.31	USGS gage #03272000, 1914-94 data
Harmonic Mean Flow	cfs		6.76	USGS gage #03272000, 1914-94 data
Gregory Creek at mouth				
7Q10	cfs	summer	0.19	USGS gage #03272200, 1960-67 data
		winter	0.51	USGS gage #03272000, 1914-94 data
		annual	0.19	USGS gage #03272200, 1960-67 data
1Q10	cfs	annual	0.16	USGS gage #03272000, 1914-94 data
30Q10	cfs	summer	0.26	USGS gage #03272200, 1960-67 data
		winter	0.77	USGS gage #03272000, 1914-94 data
Harmonic Mean Flow	cfs		0.78	USGS gage #03272200, 1960-67 data
Pleasant Run at mouth				
7Q10	cfs	summer	0.02	USGS gage #03272000, 1914-94 data
		winter	0.05	USGS gage #03272000, 1914-94 data
		annual	0.02	USGS gage #03272000, 1914-94 data
1Q10	cfs	annual	0.02	USGS gage #03272000, 1914-94 data
30Q10	cfs	summer	0.04	USGS gage #03272000, 1914-94 data
		winter	0.12	USGS gage #03272000, 1914-94 data
Harmonic Mean Flow	cfs		0.12	USGS gage #03272000, 1914-94 data
Banklick Creek at mouth				
7Q10	cfs	summer	0.01	USGS gage #03272000, 1914-94 data
		winter	0.02	USGS gage #03272000, 1914-94 data
		annual	0.01	USGS gage #03272000, 1914-94 data
1Q10	cfs	annual	0.01	USGS gage #03272000, 1914-94 data
30Q10	cfs	summer	0.01	USGS gage #03272000, 1914-94 data
		winter	0.04	USGS gage #03272000, 1914-94 data
Harmonic Mean Flow	cfs		0.03	USGS gage #03272000, 1914-94 data
Twomile Creek at mouth				
7Q10	cfs	summer	0.01	USGS gage #03272200, 1914-94 data
		winter	0.02	USGS gage #03272000, 1914-94 data
		annual	0.01	USGS gage #03272200, 1914-94 data
1Q10	cfs	annual	0.01	USGS gage #03272000, 1914-94 data
30Q10	cfs	summer	0.02	USGS gage #03272200, 1914-94 data
		winter	0.05	USGS gage #03272000, 1914-94 data
Harmonic Mean Flow	cfs		0.06	USGS gage #03272200, 1914-94 data

(Continued Table 4)

Parameter	Units		Value	Basis
Instream Temperature				
RM 87.5 - 64.5	oC	summer	24.0	LEAPS data from all municipals
		winter	6.0	"
RM 64.5 - 60.5	oC	summer	26.0	LEAPS data from all municipals
		winter	6.0	"
RM 60.5 -	oC	summer	25.0	LEAPS data from all municipals
		winter	6.0	"
Instream pH	SU	summer	8.5	LEAPS data from all municipals
		winter	8.3	"
Instream Hardness	mg/l		340.	STORET; 1598 values,0<MDL,1987-96
Background Water Quality				
Ammonia	mg/l	summer	0.03	STORET;25 values,22<MDL, 1989-94
		winter	0.05	STORET; 3 values, 1<MDL, 1990
Acetone	ug/l	annual	0.	No representative data available
Antimony	ug/l	annual	0.	No representative data available
Arsenic	ug/l	annual	1.	STORET; 4 values, 3<MDL, 1990-94
Benzyl butyl phthalate	ug/l	annual	0.	No representative data available
Beryllium	ug/l	annual	0.	No representative data available
Bis (2-ethylhexyl)phthalate	ug/l	annual	0.	No representative data available
Cadmium	ug/l	annual	0.1	STORET;24 values, 22<MDL, 1989-94
Chlorine, total res	ug/l	annual	0.	No representative data available
Chromium^{+6}, diss	ug/l	annual	0.	No representative data available
Chromium, total	ug/l	annual	0.	STORET;24 values, 24<MDL, 1989-94
Cobalt	ug/l	annual	0.	No representative tata available
Copper	ug/l	annual	5.	STORET;24 values,23<MDL, 1989-94
Cyanide, free	mg/l	annual	0.	No representative data available
Di-n-butyl phthalate	ug/l	annual	0.	No representative data available
1,1-Dichloroethene	ug/l	annual	0.	No representative data available
Fluoride	ug/l	annual	0.	No representative data available
Iron	ug/l	annual	1440.	STORET;19 values, 0<MDL, 1989-94
Manganese	ug/l	annual	0.	No representative data available
Lead	ug/l	annual	1.	STORET;24 values,19<MDL, 1989-94
Mercury	ug/l	annual	0.	No representative data available
Molybdenum	ug/l	annual	0.	No representatvie data available
Nickel	ug/l	annual	0.	STORET;24 values,24<MDL, 1989-94
Phenol	ug/l	annual	0.	No representative data available
Selenium	ug/l	annual	0.	STORET; 4 values, 4<MDL, 1990-94
Silver	ug/l	annual	0.	No representative data available
Tetrachloroethene	ug/l	annual	0.	No representative data available
1,1,1-Trichloroethane	ug/l	annual	0.	No representative data available

Trichloroethene	ug/l	annual	0.	No representative data available
Zinc	ug/l	annual	5.	STORET;24 values,15<MDL, 1989-94

(Continued Table 4)

Parameter		Units	Value	Basis
Facilities flow (cfs)				
Tri-Cities Northern Regional (MCD)		cfs	17.33	DSW
Dayton WWTP		cfs	109.84	"
Appleton Paper 001		cfs	10.06	"
Mont. Co. Western Regional WWTP		cfs	30.94	"
West Carrollton parchment		cfs	1.36	"
Fraser Paper		cfs	6.19	"
West Carrollton WWTP		cfs	2.64	"
Miamisburg WWTP		cfs	5.80	"
Mound Lab		cfs	0.82	"
DP&L (Hutchings) 002		cfs	3.48	"
Franklin WWTP		cfs	6.96	"
Bay West Paper		cfs	5.72	"
AK - Steel 011		cfs	12.96	"
Middletown WWTP		cfs	40.22	"
Crystal Tissue 001		cfs	2.7	"
LeSourdsville WWTP		cfs	18.56	"
Miller Brewery		cfs	9.44	"
Hamilton Municipal Electric 006		cfs	0.09	"
003		cfs	68.84	"
Hamilton WWTP		cfs	49.5	"
Fairfield WWTP	current	cfs	9.28	"
	proposed	cfs	15.47	"
USDOE - Fernald	current	cfs	4.29	"
	proposed	cfs	9.55	"

Table 5. Summary of Effluent Limits to Maintain Applicable Water Quality Criteria

Parameter (ug/l)	Units	Average Human Health	Average Agri Supply	Average Aquatic Life	Maximum Aquatic Life	Inside Mixing Zone Maximum
Outfall 001						
Antimony	ug/l	545600. [A]	--	11961. [A]	39290. [A]	1300.
Arsenic	ug/l	--	9069. [A]	680. [A]	680. [A]	680.
Bis(2-ethylhexyl) phthalate	ug/l	935.	--	107.	2200. [A]	2200.
Cadmium	ug/l	--	185. [A]	12.	32.	36.
Chromium^{+6}, dissolved	ug/l	--	--	21.	30.	31.
Chromium, total	ug/l	12690000. [A]	367.	425.	8713.	9800
Cobalt	ug/l	--	--	183. [A]	3989. [A]	130.
Copper	ug/l	--	1806. [A]	47.	74.	89.
Cyanide, free	mg/l	--	--	0.092 [A]	0.092 [A]	0.092
1,1-Dichloroethene	ug/l	4060. [A]	--	4910. [A]	90670. [A]	3000.
Fluoride	mg/l	--	254.	--	--	--
Iron	mg/l	--	57.	1. [B]	--	--
Lead	ug/l	--	370.	54.	1026.	1200.
Manganese	ug/l	--	--	4746. [A]	57751. [A]	2000.
Mercury	ug/l	0.046	39. [A]	1.7	3.1	3.4
Molybdenum	ug/l	--	--	1072.	120860. [A]	41000.
Nickel	ug/l	17940. [A]	780.	288.	2398.	2600.
Phenol	ug/l	--	--	3767.	11000. [A]	11000.
Selenium	ug/l	--	706.	57.	--	--
Silver	ug/l	--	--	4.8	26. [A]	26.
Tetrachloroethene	ug/l	444110. [A]	--	4595. [A]	32640. [A]	1100.
Trichloroethene	ug/l	102400. [A]	--	4721. [A]	102760. [A]	3400.
Zinc	ug/l	--	86710. [A]	577.	553.	680.
Outfall 002						
Chlorine, total residual	mg/l	--	--	0.038 [A]	0.038 [A]	0.038
Copper	ug/l	--	1806. [A]	47.	74.	89.
Fluoride	mg/l	--	254.	--	--	--

[A] Allocation must not exceed the Inside Mixing Zone Maximum.

[B] Background concentration of Iron just upstream of USDOE-Fernald is higher than Water Quality Standard for average aquatic life (1.0 mg/l). Therefore, the allocation was set to WQS.

Table 6. Parameter Assessment for Outfall 001

Group 1: Due to a lack of criteria, the following parameters could not be evaluated at this time.

Aluminum	Barium	Boron
1,1-Dichloroethane	Magnesium	Nitrate
Phosphorus	Sulfate	

Group 2: PEQ < 25% of WQS or all data below minimum detection limit; WLA not required. No limit recommended, monitoring optional.

Beryllium	Butyl Benzyl Phthalate	Di-n-butylphthalate
NO2+NO3	1,1,1-Trichloroethane	

Group 3: PEQ_{max} < 50% of maximum PEL and PEQ_{avg} < 50% of average PEL. No limit recommended, monitoring optional.

Antimony	Arsenic	Bis(2-ethylhexyl)phthalate
Chromium+6, diss.	1,1-Dichloroethene	Fluoride
Molybdenum	Phenol	Selenium
Tetrachloroethene		

Group 4: $PEQ_{max} \geq$ 50% but <100% of the maximum PEL or $PEQ_{avg} \geq$ 50% but < 100% of the average PEL. Monitoring is appropriate.

Cyanide, free (>75 %)

Group 5: Maximum PEQ $\geq$ 100% of the maximum PEL or average PEQ $\geq$ 100% of the average PEL, or either the average or maximum PEQ is between 75 and 100% of the PEL and certain conditions that increase the risk to the environment are present. Limit recommended.

Limits to Protect Numeric Water Quality Criteria

Parameter	Units	Applicable Period	Recommended Effluent Limits Average	Maximum
Ourfall 001				
Cadmium	ug/l	annual	12.	32.
Chromium, total	ug/l	annual	367.	8713.
Cobalt	ug/l	annual	--	130.
Copper	ug/l	annual	47.	74.
Iron	mg/l	annual	1.	--
Lead	ug/l	annual	54.	1026.
Manganese	ug/l	annual	--	2000.
Mercury	ug/l	annual	0.046	3.1
Nickel	ug/l	annual	288.	2398.
Silver	ug/l	annual	4.8	26.
Trichloroethene	ug/l	annual	--	3400.
Zinc	ug/l	annual	--	553.

The following equation shall be used to protect against additive effects associated with simultaneous human exposure to multiple chemicals:

$$\underline{MAC_1}/\underline{HHWLA_1} + \underline{MAC_2}/\underline{HHWLA_2} + \ldots + \underline{MAC_N}/\underline{HHWLA_N} \leq 1$$

Where:

MAC = average concentration of all samples collected within the month for each limited or monitored carcinogen; and

HHWLA = wasteload allocation (WLA) to meet human health criteria, as shown in the following table:

	Parameter	Human Health WLA (ug/l)
A	Bis (2-ethylhexyl) phthalate	935.
B	1,1-Dichloroethene	4060.
C	Tetrachloroethene	444110.
D	Trichloroethene	102400.

Table 7: Parameter Assessment for Outfall 002

Group 1: Due to a lack of criteria, the following parameters could not be evaluated at this time.

Nitrate Phosphorus

Group 2: PEQ < 25% of WQS or all data below minimum detection limit; WLA not required. No limit recommended, monitoring optional.

Chromium^{+6}, diss. Chromium, total Nickel
NO2+NO3 Silver

Group 3: PEQ_{max} < 50% of maximum PEL and PEQ_{avg} < 50% of average PEL. No limit recommended, monitoring optional.

Fluoride

Group 4: $PEQ_{max} \geq$ 50% but <100% of the maximum PEL or $PEQ_{avg} \geq$ 50% but < 100% of the average PEL. Monitoring is appropriate.

Copper

Group 5: Maximum PEQ $\geq$ 100% of the maximum PEL or average PEQ $\geq$ 100% of the average PEL, or either the average or maximum PEQ is between 75 and 100% of the PEL and certain conditions that increase the risk to the environment are present. Limit recommended.

Limits to Protect Numeric Water Quality Criteria

Parameter	Units	Applicable Period	Recommended Effluent Limits Average	Maximum
Chlorine, total res	mg/l	summer only	--	0.038

Conclusions

The 1995 ambient chemical/physical monitoring results in the Great Miami River downstream from the FEMP 001 outfall were indicative of good water quality with the exception of several mercury water quality criterion exceedences. Water chemistry results from Paddys Run were not significantly impacted by FEMP discharges, and primarily reflected the influence of groundwater and the interstitial nature of Paddys Run. Bioassay results indicated no significant acute toxicity associated with the process and wastewater 001 outfall. Radiological parameters in all media tested were low, with values less than the established Final Remediation Levels or USEPA human health acceptable levels. Sediment results in Paddys Run and the Great Miami River were of good quality both upstream and downstream from FEMP. The FEMP 001 outfall was not significantly impacting the macroinvertebrate or fish communities of the Great Miami River. Biological community performance was comparable both upstream and downstream from the 001 outfall during 1995, and a significant improvement was observed between 1980 and 1995. There was no discernible impact from the FEMP 006 stormwater outfall on fish and macroinvertebrate communities of Paddys Run. Based on the 1995 fish community study of Paddys Run, impacts to biological condition attributable to the FEMP site were not evident. Stream desiccation was the overriding influence on fish community degradation (macroinvertebrates could not be sampled in lower Paddys Run due to the lack of flow). The overall results from the 1995 study of Paddys Run and the Great Miami River revealed no discernible impact associated with the FEMP facility.

Water quality modeling was conducted to determine limits to maintain WQS. The assimilatve capacity of the Great Miami River was divided among numerous facilities in the study area, in order to account for possible interactivity of the discharges. The CONSWLA program was used to model those parameters requiring allocation.

Table 8 and Table 9 describe the final effluent limitations, monitoring requirements and justification for their recommendation.

Table 8 explains the requirements for the outfall 001. It is important to note that the effluent table has limits that are based on agency's WLA and the estimated effluent limits as were submitted by the permittee in their NPDES Permit Renewal Addendum (as part of their antidegradation application). As informed by the permittee, the estimated effluent limits submitted in their addendum are 30-day average limits. While recommending effluent limits it was checked to see that estimated effluent limits did not excced the WLA values (i.e., limits protective of Water Quality Standards). In the permit the outfall 001 has interim and final effluent tables. Mercury is required to be monitored during the interim period and the limit is to be met at the end of the compliance schedule unless the permittee applies for mercury variance as explained in the permit.

It is understood at the time of public noticing this permit that the real effluent data from outfall 001 cannot yet be characterized because the discharges from the outfall 001 do not include the treated discharge yet to occur from the Waste Pit Remedial Action Project (WPRAP). It is very likely that some of the regulated parameters as recommended in the effluent table might not require to be limited due to absence of potential hazard assessmemnt after the actual and not estimated characterization of the effluent from the outfall 001 could be made.

Table 9 describes the requirements for the outfall 002. Outfalls 003, 004, 005 and 006 are primarily storm water outfalls. Certain parameters have been recommended for monitoring and some more frequently for these outfalls based on the past history of level of detection levels and potential hazard assessment.

Table 8: Final effluent limits and monitoring requirements for U.S.D.O.E. Fernald E.M.P. outfall 1IO00004001 and the basis for their recommendation.

		Effluent Limits				
		Concentration		Loading (kg/day)[a]		
Parameter	Units	30 Day Average	Daily Maximum	30 Day Average	Daily Maximum	Basis[b]
Flow	MGD	- - - - - - - Monitor - - - - - - -				M[c]
Temperature	°C	- - - - - - - Monitor - - - - - - -				M[c]
Dissolved Oxygen	mg/l	-	5.0 min.	-	-	WQS
$CBOD_5$	mg/l	9	14	210	315	BPJ
Suspended Solids	mg/l	14	20	315	473	BPJ
Ammonia-N (summer)	mg/l	3	- -	70	- -	WLA
Oil and Grease	mg/l	4.49	4.49	105	105	BPJ
pH	S.U.	- - - - - - 6.5 to 9.0 - - - - - -				WQS
Copper, T. R.	µg/l	12.3	74	0.3	1.73	APP/WLA
Cadmium T. R.	ug/l	6.7	32	0.2	0.74	APP/WLA
Cobalt, T. R.	ug/l	14.7	130	0.34	3.0	APP/WLA
Mercury,T. R.	ug/l	0.046	3.1	0.00107	0.0724	WLA
Chromium,T	ug/l	16.4	8713	0.4	203	APP/WLA
Lead, T.R.	ug/l	6.7	32	0.2	0.7475	APP/WLA
Manganese,T.R.	ug/l	127.6	2000	3.0	46.72	APP/WLA
Nickel,T.R.	ug/l	20.0	2398	0.5	56.0	APP/WLA
Silver,T.R.	ug/l	4.8	26	0.112	0.607	WLA
Trichloroethene	ug/l	5.5	3400	0.1	79.424	APP/WLA
Zinc,T.R.	ug/l	21.9	553	0.5	12.918	APP/WLA
Benzidine	ug/l	0.67	0.67	0.0156	0.0156	WLA
Total Res.Chlorine	ug/l	38	38	0.887	0.887	WLA
Pentachlorophenol	ug/l	79	79	1.845	1.845	WLA
Toxaphene	ug/l	0.31	0.31	0.00724	0.00724	WLA
Dioxin	ug/l	- - - - - - - Monitor - - - - - - -				M[c]

[a] Effluent loadings based on average design discharge flow of 6.173 MGD.[b] Definitions: WQS = Ohio Water Quality Standards (OAC 3745-1-07); APP = Limits based on permittee's application; WLA= Waste Load Allocation; BPJ= Best Professional Judgement

[c] Monitoring required to assist in the evaluation of effluent quality and treatment plant performance.

Table 9: Final effluent limits and monitoring requirements for U.S.D.O.E. Fernald E.M.P. outfall 1IO00004**002** and the basis for their recommendation.

		Effluent Limits				
		Concentration		Loading (kg/day)		
Parameter	Units	30 Day Average	Daily Maximum	30 Day Average	Daily Maximum	Basis[a]
Flow	MGD	------- Monitor ------------				M[b]
Suspended Solids	mg/l	-	50	-	-	EP
pH	S.U.	------ 6.5 to 9.0 ------				WQS
Copper, T. R.	µg/l	---------- Monitor ----				WLA
Chlorine, T. Resid.	µg/l	-	38	-	-	WLA

[a] Definitions: WLA = Waste Load Allocation; EP = Existing Permit; WQS = Ohio Water Quality Standards (OAC 3745-1-07); [b] monitoring of flow and indicator parameters assist in the evaluation of effluent quality and treatment plant performance.

Addendum to waste load allocation (reference purpose only)

As Fluor Daniel Fernald submitted an addendum to the NPDES renewal application for the USDOE Fernald facility, the effluent quality of WPRAP was reviewed and the limits for the parameters chlorine, Ammonia-N, Pentachlorophenol, Toxaphene, and Benzidine were developed to maintain applicable water quality criteria.

These parameters could not be screened for the parameter grupings on the basis of reasonable potential and therefore, effluent limits were recommended (Table 8) that are protective of water quality standards. Following tables 1,2, and 3 are referenced to this addendum only.

Addendum to Waste Load Allocation

USDOE Fernald
(1IO00004)

Table 1. Water Quality Criteria in the Study Area

Parameter			Outside Mixing Zone Criteria: Average: Human Health	Average: Agri-culture	Average: Aquatic Life	Maximum Aquatic Life	Mixing Zone	Inside Maximum
			Units					
Ammonia	summer	mg/l	-	-	0.3	-	-	
Ammonia	winter	mg/l	-	-	1.9	-	-	
Benzidine [C]		ug/l	0.0053	-	-	-	-	
Chlorine, total residual		ug/l	-	-	11.	19.	38.	
Pentachlorophenol [D]		ug/l	-	-	24.	39.	79.	
Toxaphene [C]		ug/l	0.0073	-	0.005	-	-	

[C] Carcinogen

[D] The pH of 8.5 was used for the WQS of Pentachlorophenol.

Table 2. Instream Conditions

Parameter	Units	Value (cfs)	Basis	
Background Water Quality *				
Ammonia-N	mg/l	summer	0.03	STORET;25 values,22<MDL, 1989-94
Ammonia-N	mg/l	winter	0.05	STORET; 3 values, 1<MDL, 1990
Benzidine	ug/l	annual	0.	No representative data available
Chlorine, total res	ug/l	annual	0.	No representative data available
Pentachlorophenol	ug/l	annual	0.	No representative data available
Toxaphene	ug/l	annual	0.	No representative data available

* Background concentrations are for the headwater of GMR studied segment.
QUAL2 model for ammonia-N and CONSWLA for conservative parameters were used.

Table 3. Summary of Effluent Limits to Maintain Applicable Water Quality Criteria

Parameter		Human Units	Average Agri Health	Maximum Aquatic Supply	Inside Aquatic Life	Mixing Zone Life	Maximum
Outfall 001							
Ammonia-N	summer	mg/l	--	--	3.	--	--
Ammonia-N	winter	mg/l	--	--	18.	--	--
Benzidine		ug/l	0.67	--	--	--	--
Chlorine, total residual		ug/l	--	--	38. [A]	38. [A]	38.
Pentachlorophenol		ug/l	--	--	79. [A]	79. [A]	79.
Toxaphene		ug/l	0.31	--	0.93	--	--

[A] Allocation must not exceed the Inside Mixing Zone Maximum.

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Application No. OH0009580

Ohio EPA Permit No. 1IO00004*FD

National Pollutant Discharge Elimination System (NPDES) Permit Program

P U B L I C N O T I C E

NPDES Permit to Discharge to State Waters

Ohio Environmental Protection Agency
Permits Section
122 South Front Street
P. O. Box 1049
Columbus, Ohio 43216-1049
(614) 644-2001

Public Notice No. OEPA-99-11-029
Date of Issue of Public Notice: November 12, 1999

Name and Address of Applicant: U.S. Department of Energy, Fernald Plant, PO Box 538704, Cincinnati, Ohio 45253

Name and Address of Facility Where Discharge Occurs: U.S. DOE - Fernald, 7400 Willey Road, Fernald, Ohio

Location of Discharge:
001 - 39° 17′ 39" N; 84° 39′ 58" W
002 - 39° 17′ 34" N; 84° 41′ 21" W
003 - 39° 17′ 17" N; 84° 41′ 32" W
004 - 39° 17′ 30" N; 84° 41′ 40" W
005 - 39° 17′ 50" N; 84° 41′ 49" W
006 - 39° 18′ 14" N; 84° 41′ 51" W

Receiving Water: unnamed tributaries of Paddy's Run, Paddy's Run, and the Great Miami River

Prior to ceasing operations this facility produced uranium metals. Applicant is now involved in environmental clean-up and restoration and has 6 existing discharge points. The current operations of this discharger result in an average effluent flow of 6,173,000 gallons per day. Key parameters to be limited in the permit are as follows: Dissolved Oxygen, pH, Total Suspended Solids, Total Oil and Grease, Ammonia, Total Chlorine Residual, $CBOD_5$, Total Recoverable Cobalt, Total Manganese, Total Recoverable Nickel, Total Recoverable Silver, Total Recoverable Zinc, Total Recoverable Cadmium, Total Recoverable Lead, Total Recoverable Chromium, Total Recoverable Copper, Pentachlorophenol, Total Benzidine, Total Toxaphene, Total Recoverable Mercury, Trichloroethene and Fecal Coliform.

Ohio EPA Permit No. 1IO00004*FD

Public Notice No. 99-11-029

On the basis of preliminary staff review and application of standards and regulations, the director of the Ohio Environmental Protection Agency will issue a permit for the discharge subject to certain effluent conditions and special conditions. The draft permit will be issued as a final action unless the director revises the draft after consideration of the record of a public meeting or written comments, or upon disapproval by the administrator of the U.S. Environmental Protection Agency. Any person may submit written comments on the draft permit and administrative record and may request a public hearing. A request for public hearing shall be in writing and shall state the nature of the issues to be raised. In appropriate cases, including cases where there is significant public interest, the director may hold a public hearing on a draft permit or permits prior to final issuance of the permit or permits. Following final action by the director, any aggrieved party has the right to appeal to the Environmental Review Appeals Commission.

Interested persons are invited to submit written comments upon the discharge permit. Comments should be submitted in person or by mail no later than 30 days after the date of this public notice. Comments should be delivered or mailed to both of the following locations: 1) Ohio Environmental Protection Agency, Lazarus Government Center, Division of Surface Water, Permits Processing Unit, 122 South Front Street, P.O. Box 1049, Columbus, Ohio 43216-1049 and 2) Ohio Environmental Protection Agency, Southwest District Office, 401 E. Fifth Street, Dayton, Ohio 45402-2911.

The Ohio EPA permit number and public notice numbers should appear next to the above address on the envelope and on each page of any submitted comments. All comments received no later than 30 days after the date of this public notice will be considered.

The application, fact sheets, permit including effluent limitations, special conditions, comments received, and other documents are available for inspection and may be copied at a cost of 5 cents per page at the Ohio Environmental Protection Agency at the address shown on page one of this public notice any time between the hours of 8 a.m. and 4:30 p.m., Monday through Friday. Copies of the public notice are available at no charge at the same address.

Mailing lists are maintained for persons or groups who desire to receive public notice for all applications in the state or for certain geographical areas. Persons or groups may also request copies of fact sheets, applications, or other documents pertaining to specific applications. Persons or groups may have their names put on such a list by making a written request to the agency at the address shown above.